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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.      | CONFIRMATION NO.       |
|--|-------------|----------------------|--------------------------|------------------------|
| 10/621,324   | 07/18/2003  | Feihong Chen         | 29250-000979/US          | 2523                   |
| 32498 7590 09/25/2007<br>CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC<br>ATTN: JOHN CURTIN<br>P.O. BOX 1995<br>VIENNA, VA 22183 |             |                      | EXAMINER<br>MOORE, IAN N |                        |
|  |             |                      | ART UNIT<br>2616         | PAPER NUMBER           |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/621,324             |  | CHEN ET AL.         |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Ian N. Moore           |  | 2616                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanakubo (US 20030147346A1).

**Regarding Claims 1, 9 and 17,** Kanakubo discloses a network device processing a method (see FIG. 1, LSR-P 1) comprising:

means for detecting a failure (see FIG. 2, LSR 1 receiving/detecting fault occurrence a1) along an ingress region of a primary path (see FIG. 1, receiving fault indication along input/ingress side of normal LSP; see page 2, paragraph 25-30); and

means for re-routing traffic (see FIG. 1, LSR-P performing LSP switching) from the primary path associated with an original IP address (see FIG. 1, from a normal path corresponding to protection point IP address) to an alternate path (see FIG. 1, to bypass LSP; see page 2, paragraph 29-36) which includes the device using a forwarding table (see FIG. 3, using LSP fault indication retrieval table) that includes Internet Protocol (IP) (see FIG. 3, IP address of the protection point) and Multi-Protocol Label Switched (MPLS) routing information (see FIG. 3, entry type and entry) while associating the original IP address to the alternate path upon

detection of the failure (see FIG. 3, LSP fault indication retrieval table associates IP address of protection point to the bypass path when receiving fault indication; see page 3, paragraph 39-53).

**Regarding Claims 2,6,10,14,18, and 22**, Kanakubo discloses operable to allow traffic to travel along the primary path when the failure is no longer detected (see page 4, paragraph 56-57; see page 2, paragraph 34-35; when recovering from the fault, the packets routing over normal LSP (i.e. reverted protected switching)).

**Regarding Claims 3,7,11,15,19, and 23**, Kanakubo discloses the device is a multi-protocol label switched (MPLS) device (see FIG. 1, MPLS label switch Router (LSR) 1) and the primary and alternate paths are label switched paths (LSPs) (see FIG. 1, normal and bypass Label Switch Paths (LSPs); see page 2, paragraph 25-26).

**Regarding Claims 4,12 and 20**, Kanakubo discloses the failure is along a link between the device and the neighboring network device (see FIG. 1, fault occurrence a1 is along the LSP link between LSR-P 1 and LSR 6; see page 2, paragraph 25-29).

**Regarding Claims 5, 13 and 21**, Kanakubo discloses a network device processing a method (see FIG. 1, LSR-P 1) comprising:

means for receiving a failure message (see FIG. 2, LSR 1 receiving/detecting fault occurrence a1);

means for re-routing traffic (see FIG. 1, LSR-P performing LSP switching) from a primary path associated with an original IP address (see FIG. 1, from a normal LSP path corresponding to protection point IP address; see page 2, paragraph 25-30) to an alternate path (see FIG. 1, to bypass LSP; see page 2, paragraph 29-36) using a forwarding table (see FIG. 3, using LSP fault indication retrieval table) that includes IP see FIG. 3, IP address of the protection

point) and MPLS routing information (see FIG. 3, entry type and entry), said means for re-routing maintaining the original address (see FIG. 3, LSP fault indication retrieval table associates IP address of protection point to the bypass path; see page 3, paragraph 39-53), the alternate path comprising devices (see FIG. 1, LSR 4 and LSR 5) which maintain the same quality of service as the primary path (see page 1, paragraph 17; see page 3, paragraph 37, 54; see page 4, paragraph 60; bypass LSP comprising LSR 4 and LSR 5 and bypass LSP utilizes the same QoS policy as normal LSP since it is predefined/static LSP) and are not a part of the primary path except for the network device and a destination network device (see FIG. LSR 4 and 5 are not part of the normal LSP except LSR-P 1 and LSR-6; see page 2, paragraph 25-32).

**Regarding Claims 8,16, and 24**, Kanakubo discloses the quality of service is associated with bandwidth (see page 3, paragraph 37; the basic operation of QoS policy such as Diff-serv (differentiated service) class, band and service. Note in Diff-serv QoS/class policy band is the bandwidth (i.e. transmission data amount per unit time for each band/flow)).

3. Claims 1,5,9,13,17 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Dantu (US007167443B1).

**Regarding Claims 1, 9 and 17**, Dantu discloses a network device (see FIG. 3, node 300/340/344/348; see FIG. 4-5, node 400/500; or see FIG. 6, Node 600/616/620/624) processing a method (see FIG. 9-11, Method) comprising:

means for detecting (see FIG. 4, a combined system of processor 402, memory 404, and interface 412 performing examining/detecting; see col. 9, line 30 to col. 11, line 26; or see FIG. 5, a combined system of processor 502, memory 504, and interface 512 performing

examining/detecting; see col. 12, line 39-64; see col. 13, line 30-40) a failure along an ingress region of a primary path (see FIG. 3, a failure occurs on a working path 332 between node 344 and 348; see FIG. 9, step 902; see FIG. 10, step 1002; see col. 9, line 30, line 63; see col. 17, line 10-20,45-55; see col. 10, line 25-36); and

means for re-routing traffic (see FIG. 4, a combined system of processor 402, memory 404, storage 406 performing switching to protecting path ring in node 400; see col. 9, line 30 to col. 11, line 26; or see FIG. 5, a combined system of processor 502, memory 504, and storage 506 performing switching to protecting path ring in node 500; see col. 12, line 39-64; see col. 13, line 30-40) from the primary path associated with an original IP address (see FIG. 7, IP address 712/08) to an alternate path (see FIG. 3,6, protection path 336; see FIG. 7, a label 716 with path route) which includes the device using a forwarding table that includes Internet Protocol (IP) and Multi-Protocol Label Switched (MPLS) routing information (see FIG. 3, Forwarding table 312 and/or routing table 308; see FIG. 4, a combined system of memory 404 (e.g. routing table 404 A and forwarding table 404B) and storage 406 (e.g. table formation 406A and protection switching 406B) in node 400 includes IP addresses corresponding to MPLS labels; or see FIG. 5, a combined system of memory 504 (e.g. forwarding table 504A) and storage 506 (e.g. forwarding logic 506) in node 500 includes IP addresses corresponding to MPLS labels; see FIG. 10, S 1004, see FIG. 11, S 1104,1106; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-45) while associating the original IP address to the alternate path upon detection of the failure (see FIG. 4,5; see FIG. 10, S 1006,1008,1010; see FIG. 11, S 1108; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see

col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-46; switching IP address with its corresponding new label to the protection path when detecting a failure).

**Regarding Claims 5, 13 and 21**, Dantu discloses a network device (see FIG. 3, node 300/340/344/348; see FIG. 4-5, node 400/500; or see FIG. 6, Node 600/616/620/624) processing a method (see FIG. 9-11, Method) comprising:

means for receiving (see FIG. 4, Interface I/F 412; see FIG. 5, Interface I/F 512) a failure message (see FIG. 9, S 906, receiving a signal with error indication; see col. 17, line 11 to col. 18, line 11);

means for re-routing traffic (see FIG. 4, a combined system of processor 402, memory 404, storage 406 performing switching to protecting path ring in node 400; see col. 9, line 30 to col. 11, line 26; or see FIG. 5, a combined system of processor 502, memory 504, and storage 506 performing switching to protecting path ring in node 500; see col. 12, line 39-64; see col. 13, line 30-40) from a primary path (see FIG. 3, a working path 332; see FIG. 9, step 902; see FIG. 10, step 1002; see col. 9, line 30, line 63; see col. 17, line 10-20,45-55; see col. 10, line 25-36) associated with an original IP address (see FIG. 7, IP address 712/08) to an alternate path (see FIG. 3,6, protection path 336; see FIG. 7, a label 716 with path route) using a forwarding table that includes IP and MPLS routing information (see FIG. 3, Forwarding table 312 and/or routing table 308; see FIG. 4, a combined system of memory 404 (e.g. routing table 404 A and forwarding table 404B) and storage 406 (e.g. table formation 406A and protection switching 406B) in node 400 includes IP addresses corresponding to MPLS labels; or see FIG. 5, a combined system of memory 504 (e.g. forwarding table 504A) and storage 506 (e.g. forwarding

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logic 506) in node 500 includes IP addresses corresponding to MPLS labels; see FIG. 10, S 1004, see FIG. 11, S 1104,1106; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-45), said means for re-routing maintaining the original address (see FIG. 4,5; see FIG. 10, S 1006,1008,1010; see FIG. 11, S 1108; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-46; switching IP address with its corresponding new label to the protection path), the alternate path comprising devices (see FIG. 3, intermediate nodes 348) which maintain the same quality of service as the primary path (see FIG. 10, S 1106,1008,1010; FIG. 11, S 1104-1108; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-46; assigning QoS level of IP packet in the working path to the same QoS level in the protection path while creating a new label) and are not a part of the primary path except for the network device and a destination network device (see FIG. 3, intermediate node 348 are not part of the working path; see col. 8, line 60 to col. 9, line 62).

### ***Response to Arguments***

4. Applicant's arguments filed 8-19-2007 have been fully considered but they are not persuasive.



**Regarding claims 2 and 6, the applicant argued that, “...the words “operable to”...when interpreted in light of the specification, indicate the claimed “network device” operates to carry out the function in claims 2 and 6...”** in page 7.

**In response to applicant's argument, the examiner acknowledges** the application admission which indicates the network device operates to carry out the function in claims 2 and 6 when interpreted in light of the specification, as the function carry out by claims 2 and 6 are required function (i.e. not optional).

**Regarding claims 1-24, the applicant argued that, “...Kanakubo does not appears to discloses a failure along an ingress section of a primary path, much less the detection of such a failure. Rather, the “fault occurrence A1” in Kanakubo appears to occur outside of the ingress portion between LSR-P and LSR and does not involve router LSR...”** in page 7-8.

**In response to applicant's argument, the examiner respectfully disagrees** with the argument above.

Kanakubo discloses means for detecting a failure (see FIG. 2, LSR 1 receiving/detecting fault occurrence a1) along an ingress region of a primary path (see FIG. 1, receiving fault indication along input/ingress side/region/portion of normal LSP; see page 2, paragraph 25-30).

The applicant's broadly claimed invention discloses “a failure along an ingress section of a primary path”. Nowhere in the claimed limitation that recites exactly where the failure occurs, and what consists of an ingress region. Thus, it is clear that Kanakubo clearly anticipated the applicant broadly claimed invention.

**Regarding claims 1-24, the applicant argued that, “...Kanakubo does not appear to discloses such an alternate path...nowhere in the excerpts relied on by the examiner is there**

mention of a quality of service (QoS) with respect to an alternative path nor is maintenance of the same QoS implied by a “predefined static LSP”... in page 8.

**In response to applicant's argument, the examiner respectfully disagrees with the argument above.**

Kanakubo discloses means for re-routing traffic (see FIG. 1, LSR-P performing LSP switching) from a primary path associated with an original IP address (see FIG. 1, from a normal LSP path corresponding to protection point IP address; see page 2, paragraph 25-30) to an alternate path (see FIG. 1, to bypass LSP; see page 2, paragraph 29-36) using a forwarding table (see FIG. 3, using LSP fault indication retrieval table) that includes IP see FIG. 3, IP address of the protection point) and MPLS routing information (see FIG. 3, entry type and entry), said means for re-routing maintaining the original address (see FIG. 3, LSP fault indication retrieval table associates IP address of protection point to the bypass path; see page 3, paragraph 39-53), the alternate path comprising devices (see FIG. 1, LSR 4 and LSR 5) which maintain the same quality of service as the primary path (see page 1, paragraph 17; see page 3, paragraph 37, 54; see page 4, paragraph 60; bypass LSP comprising LSR 4 and LSR 5 and bypass LSP utilizes the same QoS policy as normal LSP since it is predefined/static LSP) and are not a part of the primary path except for the network device and a destination network device (see FIG. LSR 4 and 5 are not part of the normal LSP except LSR-P 1 and LSR-6; see page 2, paragraph 25-32).

**Regarding claims 1,5,9,13,17,21, the applicant argued that, “...Dantu do not appear to disclose a failure along an ingress section of a primary path...Dantu does not appears to discloses such an alternate path...upon selection of a path to re-route, re-routing occurs over a path that has the same QoS as a primary path...” in page 9.**

**In response to applicant's argument, the examiner respectfully disagrees with the argument above.**

Dantu discloses means for detecting (see FIG. 4, a combined system of processor 402, memory 404, and interface 412 performing examining/detecting; see col. 9, line 30 to col. 11, line 26; or see FIG. 5, a combined system of processor 502, memory 504, and interface 512 performing examining/detecting; see col. 12, line 39-64; see col. 13, line 30-40) a failure along an ingress region of a primary path (see FIG. 3, a failure occurs on a working path 332 between node 344 and 348; see FIG. 9, step 902; see FIG. 10, step 1002; see col. 9, line 30, line 63; see col. 17, line 10-20,45-55; see col. 10, line 25-36).

Dantu also discloses means for re-routing traffic (see FIG. 4, a combined system of processor 402, memory 404, storage 406 performing switching to protecting path ring in node 400; see col. 9, line 30 to col. 11, line 26; or see FIG. 5, a combined system of processor 502, memory 504, and storage 506 performing switching to protecting path ring in node 500; see col. 12, line 39-64; see col. 13, line 30-40) from a primary path (see FIG. 3, a working path 332; see FIG. 9, step 902; see FIG. 10, step 1002; see col. 9, line 30, line 63; see col. 17, line 10-20,45-55; see col. 10, line 25-36) associated with an original IP address (see FIG. 7, IP address 712/08) to **an alternate path (see FIG. 3,6, protection path 336; see FIG. 7, a label 716 with path route)** using a forwarding table that includes IP and MPLS routing information (see FIG. 3, Forwarding table 312 and/or routing table 308; see FIG. 4, a combined system of memory 404 (e.g. routing table 404 A and forwarding table 404B) and storage 406 (e.g. table formation 406A and protection switching 406B) in node 400 includes IP addresses corresponding to MPLS labels; or see FIG. 5, a combined system of memory 504 (e.g. forwarding table 504A) and storage 506

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(e.g. forwarding logic 506) in node 500 includes IP addresses corresponding to MPLS labels; see FIG. 10, S 1004, see FIG. 11, S 1104,1106; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-45), said means for re-routing maintaining the original address (see FIG. 4,5; see FIG. 10, S 1006,1008,1010; see FIG. 11, S 1108; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-46; switching IP address with its corresponding new label to the protection path), the alternate path comprising devices (see FIG. 3, intermediate nodes 348) which **maintain the same quality of service as the primary path (see FIG. 10, S 1106,1008,1010; FIG. 11, S 1104-1108; see col. 9, line 50 to col. 10, line 32; see col. 11, line 10-40; see col. 12, line 40-64; see col. 13, line 30-45; see col. 14, line 45-67; see col. 15, line 23-65; see col. 18, line 45-55; see col. 19, line 35-46; assigning QoS level of IP packet in the working path to the same QoS level in the protection path while creating a new label)** and are not a part of the primary path except for the network device and a destination network device (see FIG. 3, intermediate node 348 are not part of the working path; see col. 8, line 60 to col. 9, line 62).

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore  
Examiner  
Art Unit 2616



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